

REMARKS

Election/Restrictions

Claims 50-56 have been withdrawn pursuant to the restriction requirement. The Applicant reserves the right to pursue these claims in a divisional or continuation application.

Claim Rejections

35 U.S.C. 112

Claims 10, 11, 30, 31, 40-43, 47, 48, 66, and 67

Claims 10, 11, 30, 31, 40-43, 47, 48, 66, and 67 were rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The Office Action states that the claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Specifically, the Office Action states that there is no embodiment described in the originally filed application that includes a perforation to allow the first contact to be housed within the phosphor loaded cap that also includes a hemispherical conversion material region, and also that none of the embodiments including a

hemispherical conversion material region also comprise a phosphor loaded cap with a perforation.

Applicants respectfully disagree with this rejection. The hemispherical shaped caps and the LED shaped caps may both utilize a perforation. Paragraph 62 bases some of the structure of the LED shaped caps in terms of the hemispherical caps and states they are manufactured by the same methods. Specifically, Paragraph 62 states "[i]nstead of having a lens, emitter 130 includes a phosphor loaded cap 136 having the same basic shape as LED 152 . . . Cap 136 can be made of a similar material as the lenses described above. . . Cap 136 can be manufactured separately from LED 152 by the same methods as the lenses described above." Paragraph 64 goes on to describe the perforation in the LED shaped cap. Paragraph 68 then describes the aforementioned method of fabricating the phosphor loaded caps, and states "[i]n a step 196 a phosphor loaded cap is fabricated using known methods. . . In one method, the contacts are deposited on the bottom surface of the LED and the cap covers the LED's top and side surfaces. In another method, a contact is deposited on the LED's bottom surface and another contact is deposited on the LED's top surface. The cap is perforated on its top surface and when it is bonded to the LED the top contact is housed in, and accessible through, the perforation." The fabrication method described is not specific to one type of cap, and generic to any and all caps discussed in the invention. Paragraph 70 reiterates this, stating "[a]lthough the present invention has been described in considerable detail with reference to certain preferred configurations thereof,

other versions are possible. . .The lenses and caps described above can take many different shapes and layers and can include many different types of conversion particles. The lens and caps can be shaped to adapt to the particular application and can be shaped to focus the emitted light." Therefore, claims 10, 11, 42, 43, 47, and 48 comply with the written description requirement and are each allowable. The withdrawal of the rejections to claims 10, 11, 42, 43, 47, and 48 is respectfully requested.

Claims 30, 31, 66 and 67 are supported in the specification as originally filed in, for example, paragraphs 0050, 0051, 0054, 0058, 0059, 0060, 0061, 0062, 0063, 0068, Figures 11, 12, 13, 14, and 18 and associated text. The Specifications disclose a phosphor loaded cap and an LED having the same basic shape, with the cap "mounted in place over LED 152" and not necessarily directly on the LED. Paragraph 70 also states that "[t]he lens and caps can be shaped to adapt to the particular application and can be shaped to focus the emitted light." One of these shapes would be such that a space existed between the light source and the cap, as in claims 30, 31, 66 and 67. Applicants respectfully request the withdrawal of the rejections to claims 30, 31, 66 and 67, placing them in condition for allowance.

35 USC 102

Claims 18-21, 23-24, 27-31, 49 and 57-67

Claims 18-21, 23-24, 27-31, 49 and 57-67 were rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Pub. US2001/0050371 to Odaki et al. ("Odaki"). Claims 18 and 57

are independent claims. Claims 19-21, 23-24, 27-31 and 49 depend directly or indirectly on claim 18. Claims 58-67 depend directly or indirectly on claim 57. The following arguments will focus on the independent claims.

Applicants respectfully disagree with this rejection. Odaki discloses an LED device with either a coating or a film adhered to the LED to convert emitted light. Specifically, Odaki discloses a fluorescent layer 2' that contains the phosphor 4 and is a film adhered to the light-emitting element 1 (Odaki: Figure 1B and paragraphs 0048-49). However, Odaki does not disclose or does not teach any fluorescent layer 2' with a perforation. Therefore, Odaki does not disclose or does not suggest a phosphor loaded cap comprising a top perforation, and does not further disclose or does not teach a contact that is arranged within the top perforation and that is accessible through the top perforation.

The Office states that a perforation, and the wire which must connect through the perforation, are not shown but as the first contact is *inherently accessible*, it must be assumed that some form of perforation exists for a wire to reach the first contact. The present invention discloses a top perforation specifically designed to allow easy access to the top contact through the phosphor loaded cap. Odaki does not disclose these features within its four corners and these features cannot be assumed to be *inherently disclosed* for purposes of this 102 rejection. In fact, according to Figures 2B, 4 and 6 which show the wire, the wire never crosses through the conversion material region, as the wires are completely engulfed within or

underneath the conversion material region. Accordingly, Odaki does not disclose and does not teach the claim 18 limitations of "said phosphor loaded cap comprising a top perforation, said first contact arranged within the top perforation and is accessible through the top perforation."

Additionally, claim 18 requires "said conversion material region formed separately from said light source." The Office assumes that the conversion material region of Odaki is formed separately since the language of Paragraph 49 states that the conversion layer 2' is formed by *adhering* the film to the light emitting element. Just because a product is adhered to something, it cannot be assumed that the product is "formed separately" as defined in the present invention. The conversion material region of the present invention is already shaped into its desired form and contains the conversion material before it is attached to the light emitter. One important feature of such a structure being that it can be tested separately from the light emitting device. The film is not shaped until it is adhered to the light emitting element. Accordingly, Odaki does not disclose and does not teach such features.

Similarly to claim 18, claim 57 requires "said conversion material region fabricated separately from said light source." The same arguments made for claim 18 apply with equal force to claim 57. Accordingly, Odaki does not disclose all the limitations of claim 57.

Odaki does not disclose and does not teach all the limitations of claims 18 and 57. Accordingly, claims 18 and 57 are allowable. Claims 19-21, 23-24, and 27-31

depend from claim 18; as such, they are also allowable. Claims 58-67 depend from claim 57; as such, they are also allowable. Applicants respectfully request the withdrawal of the rejection of these claims.

35 USC 103

Claims 1-2, 5-17, 32-39, and 44-48 were rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Pub. US2001/0000622 to Reeh et al. ("Reeh") in view of U.S. 6,674,097 to Komoto et al. ("Komoto"). Claims 1, 32, and 44 are independent claims. Claims 2 and 5-17 depend directly or indirectly on claim 1. Claims 33-39 depend directly or indirectly on claim 32. Claims 45-48 depend directly or indirectly on claim 44. The following arguments will focus on the independent claims.

The Office Action admits that Reeh does not disclose that the conversion material region is uniformly distributed throughout the hemispheric conversion material region as required by claim 1. The Office now looks to Komoto to teach this limitation. Komoto discloses that several different distributions of the conversion particles can be used to produce uniform luminous light, including a uniform distribution in a hemispheric conversion material region, an inhomogeneous distribution in a hemispheric conversion material region, and a conversion material coating having a uniform thickness located on the outside of a hemispheric transparent resin.

Claim 1 requires "a hemispheric conversion material region formed separately from said light source and including conversion particles distributed uniformly

throughout said hemispheric conversion material region. . . said conversion material region shaped such that said light passing through travels through substantially similar thicknesses of said conversion material region." Komoto does not disclose these features of claim 1. Komoto discloses a fluorescent conversion material uniformly incorporated into the resin (See Column 24, lines 30-32), and coating a layer of the fluorescent conversion material uniformly onto the surface of the resin (See column 24, lines 35-38 and column 25, lines 61-63). Komoto does not disclose a uniform *distribution* of the conversion *particles* nor does it discuss having emitted light pass through a similar amount or distance of the conversion material. It discloses having a conversion material resin *evenly applied* as opposed to having the light pass through an even amount of particles. Komoto does not disclose the uniform distribution of conversion particles in any of the apparatus elements. No language in Komoto discusses the uniform distribution of conversion particles. Accordingly, Komoto does not disclose and does not teach the claim 1 limitations of "conversion particles distributed uniformly throughout said hemispheric conversion material region."

Additionally, the lens 29 (Reeh: Figure 3) of Reeh's apparatus is utilized for reducing the total reflection of the radiation within the adjacent luminescence conversion layer 4 which contains the conversion particles (Reeh: paragraph 0091). The lens 29 does not itself contain the conversion particles of the adjacent conversion layer 4. Reeh also discloses the lens 29 as being bonded to or a component part of the luminescent conversion layer 4 (Reeh:

paragraphs 0091 and 0094). Therefore, Reeh does not disclose the lens 29 as being the same element which contains the conversion material. Similarly, Komoto does not disclose a prefabricated lens containing the conversion material. Komoto discloses coating the conversion material onto the resin of the light emitting device. (See column 24, lines 30-38). Accordingly, Reeh and Komoto do not disclose and do not teach the claim 1 limitations of "a hemispheric conversion material region formed separately from said light source and including conversion particles distributed uniformly throughout said hemispheric conversion material region." The conversion material region of the present invention is already shaped into its desired form and contains the conversion material before it is attached to the light emitter. One important feature of such a structure being that it can be tested separately from, and later combined with, the light emitting device. Neither Reeh nor Komoto disclose such features.

Accordingly, Reeh and Komoto do not disclose and do not teach all the limitations of claim 1. Accordingly, claim 1 is allowable. Claims 2 and 5-17 depend from claim 1; as such, they are also allowable. Applicants respectfully request the withdrawal of the rejection of these claims.

Applicants respectfully submit that the arguments for patentability of claim 1 apply to claim 32 with equal force. Accordingly, Reeh and Komoto do not disclose and do not teach all the limitations of claim 32. Thus, claim 32 is allowable. Claims 33-39 either directly or indirectly depend from claim 32; as such, they are also allowable.

Applicants respectfully request the withdrawal of the rejection of these claims.

Applicants respectfully submit that the arguments for patentability of claim 1 apply to claim 44 with equal force. Accordingly, Reeh and Komoto do not disclose and do not teach all the limitations of claim 44. Thus, claim 44 is allowable. Claims 45-48 either directly or indirectly depend from claim 44; as such, they are also allowable. Applicants respectfully request the withdrawal of the rejection of these claims.

CONCLUSION

Claims 1, 2, 5-21, 23, 24, and 27-67 herein are allowable, and a timely Notice of Allowance is respectfully requested.

Respectfully submitted,



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